

**IRVINE RANCH WATER DISTRICT**

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June 30, 1998

Mr. Lester Snow
CALFED Bay-Delta Committee
1416 9th Street, Suite 1155
Sacramento, CA 95814

Subject: Response to the CALFED Draft EIR/EIS

Dear Mr. Snow:

The Irvine Ranch Water District (District) takes great pride in our progressive water management programs—large scale water reclamation and recycling, water conservation, groundwater management and development, environmental management, and advanced technology in treatment, planning and delivery of facilities. Our reputation in water management is widely known in the industry. We are well known for our leadership and accomplishments in water recycling and conservation, efforts which began in the 1960s. In that time not only have we developed an understanding between water resources management and water quality, but also the fine distinctions between potable and non-potable water supply and demand to achieve the effective and efficient use of water for agricultural, landscape, industrial/commercial, and most recently environmental restoration uses.

Background

The District was formed in 1961 and incorporates over 119 square miles in central Orange County spanning an area from the Santa Ana Mountains to the Pacific Ocean. The District is a multi-service agency that provides potable and non-potable water supply, wastewater collection, treatment and disposal, and water recycling services to a current estimated population of 160,000 and to over 3,200 agricultural, commercial, institutional and industrial users. In 1997, we delivered nearly 80,000 acre feet to our customers distributed as follows: 59% for potable service, 23% for non-potable service, and 18% for agricultural irrigation. Our supply in 1997 came from four sources: about 4% from native surface water, 31% from groundwater, 15% from reclaimed water, and 50% from imported water.

The District is about 60% developed and expects build out to occur in about 25 to 30 years. Our ultimate demand is projected to reach 127,000 acre feet per year, with the increased supply to be met from additional imported water as well as from increasing groundwater and recycled water.

Mr. Lester Snow
June 30, 1998
Page 2

We are actively expanding our reclaimed water supply, storage and non-potable water distribution system. Currently, the demands on this system are primarily landscape irrigation. We have efforts underway to significantly expand our recycling efforts to include new uses such as high rise office buildings for toilet flushing, cooling tower use, car washes, and other potential commercial and industrial uses.

Our reclamation and conservation projects are driven by economic and environmental considerations. We are finding as we increase our water supply efficiency efforts beyond our current levels, some reclamation and conservation projects are becoming more marginal. Without better state and regional incentives and sharing of overall benefits that are being derived throughout the State, increased reclamation and conservation efforts may slow. The promise that CALFED offers is one of improved water supply, reliability and quality, which together will help the State to realize improvements in water supply efficiency and water quality management.

Currently, existing groundwater management law and its interpretation in Orange County creates a significant non public health disincentive to the expansion of water recycling. Similar problems may exist elsewhere in the State, and legislation to eliminate such disincentives should be considered by CALFED as one of its implementation measures.

Water Supply and Quality

From the standpoint of recycling, salinity is the single most important constituent. Our experience has shown that all users benefit from low salinity water. Residential customers are much less inclined to soften lower salinity water. Commercial and industrial users are less inclined to condition their water to meet process requirements. Those that need to condition their water save capital and operating expenses when conditioning lower salinity water.

Bear in mind, that when water is conditioned to meet requirements, the effects of the conditioning are not merely additive. Experience has shown us that it takes increasingly greater chemical and physical treatment to condition high salinity water than lower salinity water. As a consequence water use efficiency decreases at a greater rate as the salinity of the water increases.

Salinity is the primary impediment to water recycling or reuse efficiency. Historically, water consumption in California revolved around use it once and dispose of it mostly into the ocean. Water recycling as currently practiced revolves around a single recycling of water primarily for irrigation. Theoretically, there is no limit to the number of times water can be recycled. Practically, the number of times water can be recycled is limited by the final increment of additional salinity, which renders the water unsuitable for reclamation. We have developed a low salinity groundwater source, which has allowed us to pursue multiple recycling of water, by adding new industrial and commercial uses. Multiple recycling of water substantially lessens the burden for development of new water sources, but can only happen when the initial salinity of the source water is sufficiently low to allow it.

Mr. Lester Snow
June 30, 1998
Page 3

From water quality and water use efficiency perspectives, the amount of dissolved organic matter in the water supply is particularly important for the domestic use of water. While dissolved organic matter, a common ingredient in estuarine waters does not degrade the water per se, disinfecting such water with chlorine creates trihalomethanes, haloacetic acids and other disinfection byproducts, and disinfecting with ozone creates haloacetic acids and biologically assimilative organics, and both families of compounds decrease the potability of water. Treatment methods exist to remove these compounds from portable water, but at substantial expense. The need for improved source water quality is evident. In addition, water use efficiency would be greatly enhanced through a water quality program which features effective non-point source control measures.

Ecosystem restoration is just as important here in Southern California as it is in the Delta. By virtue of rainfall patterns most of the wetlands are in the north, however, the loss of historic wetlands is just as severe in Southern California as it is to the north. Recycled water is being used to restore historic wetlands, and create new wetlands in amenable areas. Regardless of their physical location all wetlands are linked by water, waterfowl, fish, and other biological communities. In this context, recycled water can offer an important contribution to wetlands restoration and maintenance, and should be encouraged throughout the State. Wetlands, regardless of their location, have the capability of improving water quality, and therefore should be part of the effort to reduce point and non-point sources of pollution. For the record, I have submitted information on the San Joaquin Marsh, a wetland creation, restoration, and maintenance project owned and operated by the Irvine Ranch Water District.

Water Recycling

Water recycling programs which are essential to the development and efficient use of new water supplies under the CALFED process, are expensive long term solutions necessary to meet the ultimate water demands in the State. Water recycling could be significantly expanded if there were an efficient and effective State/Federal government grant program. Current State and Federal grant programs are cumbersome, difficult to apply for, and require a burdensome level of bureaucracy to be negotiated. CALFED should evaluate successful grant programs to produce a streamlined grant process, which would encourage agencies to seek supplemental funding for their water recycling projects.

CALFED needs to incorporate water quality and quantity criteria when developing its priority of grant eligible projects. It is extremely important that water recycling projects become regional solutions to water quality and quantity problems, and not narrowly focused on the immediate impacts of a project. Most of the watersheds in the State are serial basins, dependent of water flowing as surface or groundwater from upgradient, and supplying water to adjacent basins downgradient. CALFED should acknowledge the needs of downstream users and not allow or fund projects based on a relaxation of water quality standards, or cause standards to be relaxed in order to make marginal projects economically viable. To the contrary, CALFED should encourage and fund projects which seek to improve basin water quality and the quality of water migrating into adjacent basins.

Mr. Lester Snow
June 30, 1998
Page 4

In the District's experience the most effective water recycling programs utilize water sources low in total dissolved solids. Also, the most effective water recycling programs are voluntary rather than mandated programs. It is true that mandated recycling programs will generate the largest number of customers in the short term, but in the long term it is water quality which keeps customers, and minimizes the opportunities for customers to develop or switch to other water sources. To achieve success in water recycling, CALFED should stress voluntary programs rather than mandated programs. CALFED should incorporate the results of the Metropolitan Water District Salinity Management Study as a guide to develop guidelines for effective water recycling programs.

Water Conservation

Since 1991, the District has utilized an incentive based water pricing system, an Ascending Block Rate Structure, which is based on water budgets for common customer use groups. This tool has enabled the District to implement virtually every best management practice. Through this rate structure and application of water budgets, the District has experienced significant success in reducing water use and building an efficient water use ethic among its customers. Residential water use has been reduced 12% since 1991, while landscape irrigation has been reduced 43%. These reductions translate into saving 58,000 acre feet between 1991 and 1997.

The District supports the Common Program Elements, especially a strong Water Use Efficiency Program. Based on our positive experiences with BMPs, such as incentive pricing, metering, landscape and residential water budgets, we see the ability to standardize conservation methods across the State. Whereas the District has perused a vigorous water conservation program, we see slow progress by other agencies to develop proactive water conservation programs. CALFED is in the unique position to establish meaningful enforcement of water use efficiency programs that would contribute to the overall success of the CALFED program.

The District and neighboring water agencies in Orange County have pushed the envelope in implementing effective conservation programs, and see that water use efficiency is key to the ultimate success of the CALFED program. However, we realize that as our customers become more efficient, they also have less room to cut back when water supplies are stressed. Therefore, a reliable water supply is paramount to those agencies that practice aggressive conservation policies and programs and agencies which implement effective conservation programs should be given priority in water allocations.

Summary

As we expand conservation and become increasingly efficient, shortages in the imported water supply will cause increasingly severe economic and non-economic impacts on our community. Therefore, as we become more efficient, it is important that the imported water supply must become more reliable.

Mr. Lester Snow
June 30, 1998
Page 5

Not only is water quality essential for public health, it is also a critical component to our long term supply balance and our ability to continue cost-effective water recycling. Ongoing salt damage to soils and plant, maintenance of long term acceptable dissolved salt levels in groundwater, salinity impacts on customers, and the ability to meet regulatory discharge requirements are critical needs which must be solved. Water quality improvements that can be realized through construction of a bypass channel around the Delta offer the only viable solution to the historical reverse flow problem and organic loading from the Delta.

Reliability, water quality, the cost of imported water, and the availability of sufficient incentive funds are critical to retail water agencies goals to further expand recycling and conservation efforts.

The District's concerns can be summarized in four topic areas:

- Improved water quality
- Increased water supply
- Removal of institutional and legislative barriers
- Inclusion of a State/Federal grant program

We are doing our part to be water wise and efficient and support CALFED's efforts to find a much needed Bay-Delta solution, and we are more than willing to offer expertise in water recycling and conservation to augment the CALFED program.

Yours truly,

IRVINE RANCH WATER DISTRICT



Ronald E. Young
General Manager